Form 1449 (Modified)

Information Disclosure Statement By Applicant

Atty	Docket No.:	
	D O (1 DO (0	

U.S. Patent Documents

Form 1449 (N	Modified)			Atty Docket No.	.:	Applica	tion No.:	
,				IMM1P06	0.RE	09	/393,998	/
	mation Discl	osure		Applicant:				コ
Estate	Statement By Applicant				C. Cu	lver	2/	*
13	, ,,			Filing Date:		Group:	- 3/1 V	
6 m y Use S	everal Sheets if Ned	cessary)		9/8/99) ·		2675	0 2
5	-						26	
Examiner		U.S	S. Pa	atent Documents				THE CENTED TON TON
Examiner						Sub-	Filing	198
Initial	Patent No.	Date		Patentee	Class	Class	Date	
(1 Now	3,919,691	11/11/75	No	oll	340	172.5	5/26/71	
(hun)	4,131,033	12/26/78	W	right et al.	74	553	2/18/77]
	4,398,889	08/16/83	La	m et al.	434	45	6/8/81]
	4,477,043	10/16/84	Re	pperger	244	223	12/15/82	
	4,489,304	12/18/84	Ha	ıyes	338	128	7/22/83	
	4,560,983	12/24/85	W	illiams	340	825	9/17/82	
	4,604,016	8/5/86	Jo	yce	414	7	8/3/83	
	4,692,756	9/8/87	Cl	ark	340	709	7/5/84	
	4,706,294	11/10/87	Οι	ıchida	381	109	6/10/86	
	4,712,101	12/8/87	Cu	ılver	340	710	12/4/84]
	4,724,715	2/16/88	Cu	ılver	74	471R	4/30/86]
	4,782,327	11/1/88	Kl	ey et al.	340	365	1/2/85	
	4,794,384	12/27/88	Jac	ckson	340	710	4/9/87	
	4,795,296	1/3/89	Jai	u	414	5	11/17/86]
	4,800,721	01/31/89	Ce	menska et al.	60	393	2/13/87	
	4,823,634	4/25/89	Cu	ılver	74	471XY	11/3/87]
	4,861,269	8/29/89	M	eenen, Jr.	434	45	3/30/88]
	4,868,549	9/19/89	Af	finito et al.	340	710]
	4,935,728	6/19/90	Kl	ey	340	709	11/20/87]
	4,949,119	8/14/90	M	oncrief et al.	364	578	1/12/89]
	4,962,448	10/9/90	Dε	eMaio et al.	364	146	9/30/88]
	4,983,901	1/8/91	Le	hmer	318	685	4/21/89]
	5,007,300	4/16/91	Si		74	471	1/22/90]
	5,044,956	09/03/91	L	hensky et al.	434	45	1/12/89	}
	5,095,303	3/10/92	<u> </u>	ark et al.	340	710]
	5,103,404	4/7/92		cIntosh	318	568.22	12/20/89]
	5,107,080	4/21/92	Ro	sen	200	6A	12/1/89]
	5,142,931	9/1/92		enahem	74	471XY	2/14/91	_
	5,146,566	9/8/92		ollis, Jr. et al.	395	275	5/29/91	
	5,184,319	2/2/93	Kr	amer	364	806	2/2/90	

Examiner: **Date Considered:**

Form 1449 (Modified)

Information Disclosus

Statement By Applicant

(Use Several Sheets if Necessary)

Atty Docket No.:

Application No.: 09/393,998

IMM1P060.RE

C. Culver

Filing Date:

Applicant:

9/8/99

Group:

U.S. Patent Documents

Examiner					Sub-	Filing
Initial	Patent No.	Date	Patentee	Class	Class	Date
Man	5,185,561	2/9/93	Good et al.	318	432	7/23/91
0009	5,186,629	2/16/93	Rohen	434	114	8/22/91
	5,193,963	3/16/93	McAffee et al.	414	5	10/31/90
	5,203,563	4/20/93	Loper, III	273	148B	3/21/91
	5,220,260	6/15/93	Schuler	318	561	10/24/91
	5,223,776	6/29/93	Radke et al.	318	568.1	12/31/90
	5,235,868	8/17/93	Culver	74	471XY	10/2/91
	5,237,327	8/17/93	Saitoh et al.	341	176	11/14/91
	5,280,276	1/18/94	Kwok	345	167	7/10/92
	5,284,330	2/8/94	Carlson	267	140.14	6/18/92
	5,296,846	3/22/94	Ledley	345	161	10/5/92
	5,296,871	3/22/94	Paley	345	163	7/27/92
	5,313,230	5/17/94	Venolia et al.	345	163	7/24/92
	5,317,336	5/31/94	Hall	345	164	6/23/92
	5,381,080	1/10/95	Schnell et al.	318	566	2/18/93
	5,396,266	3/7/95	Brimhall	345	161	6/8/93
	5,405,152	4/11/95	Katanics et al.	273	438	6/8/93
	5,414,337	5/9/95	Schuler	318	561	6/11/93
	5,457,479	10/10/95	Cheng	345	163	6/13/94
	5,473,344	12/5/95	Bacon et al.	345	163	1/6/94
	5,477,237	12/19/95	Parks	345	156	7/14/94
	5,491,477	2/13/96	Clark et al.	341	20	9/13/93
	5,492,312	2/20/96	Carlson	267	140	4/17/95
	5,512,919	4/30/96	Araki	345	156	3/30/93
	5,513,100	4/30/96	Parker et al.	364	167.01	6/10/93
	5,543,821	8/6/96	Marchis et al.	345	167	7/20/94
	5,583,407	12/10/96	Yamaguchi	318	551	12/27/94
	5,587,937	12/24/96	Massie et al.	364	578	4/25/95
	5,623,582	4/22/97	Rosenberg	395	99	7/14/94
	5,627,531	5/6/97	Posso et al.	341	22	9/30/94

Examiner:	(len)	Date Considered:	101	/19/	07	

Form 1449 (Modified) Information Dise **Statement By Applicant**

(Use Several Sheets if Necessary)

Atty Docket No.:	Application No.:
IMM1P060.RE	09/393, % 98
Applicant:	Mol

C. Culver

Filing Date:

Group:

9/8/99

2675

U.S. Patent Documents

Examiner					Sub-	Filing
Initial	Pațent No.	Date	Patentee	Class	Class	Date
Gum	5,629,594	5/13/97	Jacobus et al.	318	568.11	10/16/95
1	5,642,469	6/24/97	Hannaford	395	99	11/3/94
	5,643,087	7/1/97	Marcus et al.	463	38	7/29/94
	5,666,473	9/9/97	Wallace	345	420	10/8/92
	5,691,747	11/25/97	Amano	345	167	12/19/94
	5,709,219	01/20/98	Chen et al.	128	782	08/01/96
	5,714,978	02/02/98	Yamanaka et al.	345	157	12/05/95
	5,721,566	2/24/98	Rosenberg et al.	345	161	6/9/95 ·
	5,724,106	3/3/98	Autry et al.	348	734	3/27/96
	5,734,373	3/31/98	Rosenberg et al.	345	161	12/1/95
	5,742,278	4/21/98	Chen	345	156	11/1/95
	5,769,640	6/23/98	Jacobus et al.	434	262	8/10/95
	5,790,108	8/4/98	Salcudean et al.	345	184	10/23/92
	5,816,823	10/6/98	Naimark et al.	434	307	10/9/96
	5,821,920	10/13/98	Rosenberg et al.	345	156	3/28/97
	5,841,423	11/24/98	Carrol, Jr. et al.	345	168	12/26/95
	5,841,428	11/24/98	Jaeger et al.	345	184	9/20/96
	5,889,670	3/30/99	Schuler et al.	364	186	1/11/96
	6,004,134	12/21/99	Marcus et al.	434	45	5/19/94
	6,104,382	8/15/00	Martin et al.	345	161	4/10/98
	6,256,011	7/3/01	Culver	345	157	12/1/98
	ļ					
		1				

Examiner: **Date Considered:** Examiner: Initial citation considered. Draw line through citation if not in conformance and not

considered. Include copy of this form with next communication to applicant.

<i>i</i>		33
Form 1449 (Modified)	AND O B AND	OFFICE
Information D Statement By		*

Atty Docket No.:	Application No.:				
IMM1P060.RE	09/393,998				

Foreign Patent or Published Foreign Patent Application

Form 1449 (Mo	dified)	AUB O	2 Jan. 2	Att	y Docket No.:		Applicat	ion No.	:	
•	Form 1449 (Modified)			IMM1P060.RE	09/	}					
Information Disclosures 1		Ap	plicant:			_	3				
			Applican				C. Culv	er er	R.	R. C.	_
		•	• •		Fili	ng Date:		Group:	Mol	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	2/_
(Use S	Sever	al Sheets	if Necessary,)		9/8/99		8	2675	2, d.	T
										1/2 O	2, C
		Fore	ign Patent	t or Publi	ished	d Foreign Patent	Applica	tion		Alco o o o o o o o o o o o o o o o o o o	
Examiner		Doci	ument	Publicat	tion	Country or		Sub-	Trans	slation	
Initial			No.	Date		Patent Office	Class	class	Yes	No	
wow		062663	4 A2	30 Nov 9	94	EPO			X		
Elwan		WO95/2	20788	3 Aug 9:	5	PCT			X		
flow	/	WO92/	00559	9 Jan 92		PCT			X		
Thor	/	026501	1 A1	27 Apr 8	88	EPO			X		
Chris		060758	0 A1	27 Jul 94	4	EPO			X		
Many		H6-210	065	2 Aug 9	4	Japan			X		
		•									
											•
					· ·			 			
·								 			
									 		
								<u> </u>	-		
-							l	-		 	
								 	-	 	
								 	ļ	 	
									ļ	 	
							<u></u>	1			

Examiner:	1 Can	Date Considered:	10/19/97

Form 1449 (Modified) AUG 0 6 2001 Information Discosure Statement By Applican

Atty Docket No.: IMM1P060.RE **Application No.:**

Form 1449 (M	odified) (AUG 0 6 2001 2	Atty Docket No.:	Application No.:						
AND U WILL		IMM1P060.RE	09/393,998 Culver						
Information Disclosure		Applicant:	A						
	ent By Applicant		Culver &						
Statem	ent by Applicant		Will the state of						
		Filing Date:	Group: Og 60 12						
(Use Sevi	eral Sheets if Necessary)	9/8/99	2675						
			76 O.						
	Oth	ner Documents							
									
Examiner									
Initial		, Date, Place (e.g. Journal)							
		ion Areas for a Force-Feedback Jo	oystick," ASME 1993, DSC-Vol.						
Mol	49, pp. 47-54.	· · · · · · · · · · · · · · · · · · ·							
		mance with a Dextrous Teleoperat	ted Hand System," Proceedings						
Chun /	of SPIE, November 1992, Vol. Russo, Massimo Andrea "The	Design and Implementation of a T	hree Degree-of-Freedom Force						
min		of Mechanical Engineering, May 1							
1/		roy Evaluation of Virtual Haptic P							
My .	Research Center Suzuki Motor	Corporation.							
Capul	Su, S. Augustine et al., "The Vi	rtual Panel Architecture: A 3D Ge	esture Framework," IEEE 1993.						
40	Rosenberg, Louis B., Perceptua	l Design of A Virtual Rigid Surface	ce Contact, Center for Design						
(Mon)		Armstrong Laboratory, AL/CF-TF							
Cland		Ellis, R.E. et al., "Design and Evaluation of a High-Performance Prototype Planar Haptic							
CILLEY		Interface," ASME December 3, 1993, DSC-Vol. 49, pp. 55-64.							
Clron		Adlestein, Bernard D. et al., "Design and Implementation of a Force Reflecting Manipulandum for Manual Control Research" 1992, pp. 1-24							
		for Manual Control Research," 1992, pp. 1-24. Adelstein Bernard D. et al., "A High Performance Two Degree-of-Freedom Kinesthetic							
1 lug~		ute of Technology 1992, pp. 108-							
(111		ng and Seeing: Issues in Force Dis							
COM	Batter, James J. et al., "Grope-1	1: A Computer Display to the Sens	se of Feel." pp. TA-4-188-TA-4-						
Clay	192.	1 1 1							
25		of Mechanical Properties at the M	Man-Machine Interface," IEEE						
CANO.	1987, pp. 688-689.								
(1.10		omputing with Feeling," Comput.	& Graphics, Vol. 2, No. 2-E, pp.						
(hw)	97-103. Wiker Steven F et al "Develo	opment of Tactile Mice for Blind A	Access to Computers:						
C^{1}		us, Object Size, and Vibrotactile D							
Chor		55th Annual Meeting 1991, pp. 708							
		with Force-feedback: Developme							
(man)		tor," Computer Graphics, Vol. 24							
Plan V		Hirota, Koichi et al., "Development of Surface Display," IEEE 0-7803-1363-1, 1993, pp. 256-							
1.MM	262.								
[dans]		Akamatsu, M. et al., "Multimodal Mouse: A Mouse-Type Device with Tactile and Force							
COUNT		Display," Presence, Vol. 3, No. 1, 1994, pp. 73-80. Millman, P. et al., "Design of a Four Degree-of-Freedom Force-Reflecting Manipulandum with a							
i i san		Four Degree-of-Freedom Force-R pace," IEEE CH2969-4, 1991, pp.							
- 1/VPU //		PE Haptic Displays for Scientific							
1 insul	Graphics, Vol. 24, No. 4, 1990,		c visualization, Computer						
Chan Chan Chan Chan Chan		se: Tactile and Kinesthetic Feedba	ack in the Human-Computer						
	Interface using an Electromagne	etically Actuated Input/Output De	vice," Dept. of Elec. Eng., Univ.						
I to cont	of Brit. Columbia, 1993, pp. 1-2		, 1						

Examiner:	Dam	Many	Date Considered:	10	/19	_	6	/	_

Form 1449 (Modified) Information Discussed **Statement By Applicant**

Atty Docket No.:	Application No.:
IMM1P060.RE	09/393,998
	

Other Documents

Form 1449 (Mo	dified ANG TO BE AND S	Atty Docket No.:	Application No.:				
		E. S.	IMM1P060.RE	09/393,998				
Info	rm	ation Disclinate	Applicant:	1				
Statement By Applicant C. Culver				Culver 👸 🐰 <table-cell></table-cell>				
			Filing Date:	Group:				
(Use Several Sheets if Necessary)		ral Sheets if Necessary)	9/8/99	2675				
		Oth	er Documents	09/393,998 Culver				
Examiner								
Initial			Date, Place (e.g. Journal)					
	/	Rosenberg, Louis B., "Virtual H	aptic Overlays Enhance Perform	ance in Telepresence Tasks,"				
Chor	<i>`</i>	SPIE 1994. Bostrom, M. et al., "Design of An Interactive Lumbar Puncture Simulator With Tactile Feedback," IEEE 0-7803-1363, 1993, pp. 280-286.						
/.		Ramstein, Christophe, "The Pan	tograph: A Large Workspace Ha					
M		Human-Computer Interaction", Ouh-young, M. et al., "Creating						
asim		Science Dept., Univ. of N. Caro	olina, 1989, pp. 1-14.					
Mor	/		dback Cursor Control," NASA T	ech Brief, Vol. 13, No. 11, Item				
(NVOC	i	#21, 1989, pp. i, 1-4. Hayward, V. et al., "Design and Multi-Objective Optimization of a Linkage for a Haptic						
Aviv		Interface," Advances in Robot Kinematics and Computationed Geometry, Kluwer Academic Publishers, 1994, pp. 359-368.						
Um		Iwata, Hiroo, "Pen-based Haptic 292.		· · · · · · · · · · · · · · · · · · ·				
Chow			riney III, C., "Computer Simulated Visual and Tactile Feedback as an Aid to Manipulator and ehicle Control," Mass. Inst. of Tech., 1981, pp. 1-79.					
Chow		Kilpatrick, P., "The Use of a Kin N. Carolina, 1976, pp. 1-175.	a Kinesthetic Supplement in an Interactive Graphics System," Univ. of 5.					
-	*							
	*							
	*		· —					

Examiner:	Dan Olin	/	Date Considered:	10/19/01	